

# Sex and age differences in symptoms in borderline personality symptomatology

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## Abstract

**Objective.** Variations in the symptoms of borderline personality disorder (BPD) as a function of sex and age remain unclear. In this study, we examined sex and age differences with regard to various symptoms encountered in BPD. **Methods.** Using a compilation of four samples, all cross-sectional from the same recruitment site and with identical self-report measures for borderline personality symptomatology (BPS), we examined sex- and age-related differences with regard to borderline personality among 1,503 primary care patients. **Results.** Men and women did not differ significantly in their overall scores or rates of BPS. With regard to sex differences in symptoms among respondents with substantial BPS, **engagement in sexually abusive relationships was more common among women than men.** Overall scores and rates of BPS were greater among younger respondents compared to older respondents. With regard to age differences among those with substantial BPS, **self-cutting and scratching were more common in younger individuals** whereas **finding life dull and meaningless was more common among older individuals.** **Conclusions.** There appear to be few overall symptomatic differences among individuals with borderline personality with regard to sex and age.

**Key words:** Borderline personality, borderline personality disorder, self-harm behavior, Self-Harm Inventory

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## Introduction

In understanding the nature and course of borderline personality disorder (BPD), age and sex appear to be moderating variables. At the outset, the proportions of men and women with BPD are controversial. According to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)*; American Psychiatric Association (1994), women are more likely to suffer from BPD than men. However, Grant et al. (2008) reported no sex differences in the prevalence of BPD.

In addition, several studies have examined sex differences in the symptoms and correlates of BPD. For example, various investigators have indicated that substance abuse is more common in men with BPD (Grant et al. 2008; Johnson et al. 2003; Tadic et al. 2009; Zanarini et al. 1998a; Zlotnick et al. 2002) as well as intermittent explosive disorder (Zlotnick et al. 2002), whereas mood disorders and anxiety disorders (Grant et al. 2008; Tadic et al. 2009) as well as eating disorders (Tadic et al. 2009; Johnson et al. 2003; Zanarini et al. 1998a; Zlotnick et al. 2002) and post-traumatic stress disorder (Grant et al. 2008; Johnson et al. 2003; Zanarini et al. 1998a) are reported as more common in women. In addition, males with BPD may be more likely to have comorbid paranoid, passive-aggressive, narcissistic, sadistic, and antisocial personality disorders (Zanarini et al. 1998b;

Tadic et al. 2009). While few studies have examined specific self-harm behaviors as related to sex, in a British sample, Marchetto (2006) **found no sex differences with regard to self-cutting.**

As for age, previous investigators have noted that the **symptoms of BPD appear to remit over time** (Paris 2003; Stone 2001). For example, upon the review of four retrospective studies examining 15-year outcomes in BPD, Karaklic and Bungener (2010) concluded that global functioning in such patients improved substantially over time, as measured by mean scores on the *DSM Global Assessment of Functioning* scale. Zanarini et al. (2005a) found that **nearly 75% of patients with BPD experienced symptom remission over time.** In addition, in examining the 10-year outcome of 175 patients with BPD, Gunderson et al. (2011) found that **85% experienced symptom remission.**

In addition to overall remittance of BPD symptoms with age, the **types of symptoms appear to vary between younger and older patients.** In this regard, in a Danish study, Qin (2011) found that the **relationship between BPD and suicide was far stronger in younger individuals, especially those ages 35 years or less, than in older individuals.** De Moor et al. (2009) reported that **younger men with BPD were more likely to experience identity problems and self-harm behavior compared to older men with BPD.** In this same study, investigators found that younger women with BPD evidenced more identity problems and affective instability than older women with BPD. Finally, Stepp and Pilkonis (2008) examined a community sample and reported that, compared

with younger individuals with BPD, older individuals with BPD were overall less impulsive and exhibited fewer suicidal behaviors.

As for additional possible differences related to age, symptoms reflective of common psychodynamic themes with this Axis II disorder may clinically manifest differently among elderly individuals with BPD. As examples, Himelick and Walsh (2002) found that identity disturbance in the elderly manifested as an inability to plan or set goals; self-destructive behavior manifested as a refusal to eat, appeals for polypharmacy, and noncompliance with reasonable treatment expectations; and impulsivity manifested as extreme irritability. Unlike previous investigators, Himelick and Walsh argued that these age-related changes do not necessarily indicate a reduced presence of borderline symptoms and may contribute to additional relationship conflicts.

Finally, paradoxically, more symptoms may accumulate among individuals with BPD as the aging process continues. For example, in a study by Barrachina et al. (2011), investigators found that comorbid personality disorder symptoms were statistically significantly more common in older women with BPD, compared to younger women with BPD. This finding may indicate a more symptomatic course on Axis II among elderly women with BPD, and may partially explain the relational difficulties described by Himelick and Walsh (2002).

To summarize, with aging, there appear to be four main themes—BPD symptoms may diminish over time; particular symptoms may be less present with age; symptoms may manifest in different ways; and additional symptoms, such as other Axis II symptoms, may accumulate with age in women with BPD.

In the following study, we examined various self-harm behaviors and psychological symptoms among participants with borderline personality symptomatology (BPS; i.e., the presence of significant features of BPD but without explicit diagnostic confirmation of the disorder through interview) in relationship to age and sex, in an effort to further clarify potential differences.

## Method

### Participants

To maximize the size of the current sample for investigation, we compiled four datasets of individuals (Sansone et al. 2010, 2011, 2012a, 2012b) who participated in projects over a two-year (2009–2011) period. Participants in these four studies were males and females, ages 18 years or older, recruited from an identical clinical setting (an internal medicine outpatient clinic) where each was being seen for non-emergent medical care. The outpatient clinic is staffed by both faculty and residents in the Department of Internal Medicine, and is located in a mid-sized, mid-western city. However, the majority of patients recruited for these studies were seen by resident providers. These were all samples of convenience.

In each study, the recruiter informally assessed and excluded individuals with compromising medical (e.g., pain), intellectual (e.g., mental retardation), cognitive (e.g., dementia), or psychiatric symptoms (e.g., psychotic)

of a severity that would preclude the candidate's ability to successfully complete a survey. Few individuals were actually excluded and the most common reasons for exclusion were severe illness and/or language difficulties.

The collective sample size for this study consisted of 1,503 patients who provided their age and who completed at least one of the two measures of BPS. Of these 1,503 respondents, 498 (33.1%) were male, and 1,005 (66.9%) were female (this gender proportion mirrors the proportions of patients who routinely present for service in this setting). Participants ranged in age from 18 to 97 years ( $M = 50.92$ ,  $SD = 15.74$ ). Most participants were White/Caucasian (87.9%), followed by African-American (7.9%); 4.2% indicated some other ethnicity/race.

### Procedure

During clinic hours, the recruiter positioned him- or herself in the lobby of the internal medicine outpatient clinic, approached consecutive incoming patients, and informally assessed exclusion criteria. With potential candidates, the recruiter then reviewed the focus of the project and invited each to participate. Each participant was asked to complete a multi-page survey, which typically took about 10 minutes. Participants were asked to place completed surveys into sealed envelopes and then into a collection box in the lobby.

In addition to demographic queries (e.g., sex, age, and racial/ethnic origin), each survey contained two measures of BPS—the BPD scale of the Personality Diagnostic Questionnaire-4 (PDQ-4; Hyler 1994) and the Self-Harm Inventory (SHI; Sansone et al. 1998). The BPD scale of the PDQ-4 is a 9-item, true/false, self-report measure that consists of the diagnostic criteria for BPD that are listed in the *DSM-IV* (American Psychiatric Association 1994). A score of 5 or higher on this measure is highly suggestive of BPD. Previous versions of the PDQ have been found to be useful screening tools for BPD in both clinical (Dubro et al. 1988; Hyler et al. 1990) and nonclinical samples (Johnson and Bornstein 1992), including the use of the freestanding BPD scale (Patrick et al. 1995).

The second measure of BPS, the SHI, is a 22-item, yes/no, self-report inventory that explores respondents' lifetime histories of self-harm behavior (Sansone et al. 1998; see Supplementary material in the Appendix; to be found online at <http://informahealthcare.com/doi/abs/10.3109/13651501.2013.865755>). Each item in the inventory is preceded by the statement, "Have you ever intentionally, or on purpose, ..." Individual items include, "overdosed, cut yourself on purpose, burned yourself on purpose," and "hit yourself." Each endorsement increases the possibility of pathology. The SHI total score is the summation of "yes" responses. SHI total scores of 5 or greater on this measure are highly suggestive of the diagnosis of BPD (Sansone et al. 1998). Indeed, in comparison with the Diagnostic Interview for Borderlines (Kolb and Gunderson 1980), a benchmark measure for the diagnosis of BPD in research settings, the SHI demonstrated an overall accuracy in diagnosis of 84% (Sansone et al. 1998).

These various projects were reviewed and exempted by the institutional review boards of both the community hospital as well as the university. Completion of the survey was

assumed to function as implied consent, which was explicitly clarified on the cover page of the booklet.

### Statistics

For comparisons between two groups, we employed one-way analyses of variance when the dependent variable was continuous (e.g., SHI and PDQ-4 scores) and chi-square analyses when the dependent variable was the percentage of respondents who endorsed a particular item or exceeded a clinical cutoff score. Correlational relationships between two continuous variables were examined with simple correlation coefficients. Last, multivariate analyses consisted of multiple regression analyses in which all predictor variables were entered simultaneously.

### Results

Across the entire sample, males and females did not differ significantly as to either PDQ-4 scores [ $F(1,1511) = 2.99$ ,  $p < 0.09$ ] or SHI scores [ $F(1,1507) = 0.64$ ,  $p < 0.43$ ]. The proportions of males (13.6%) and females (15.6%) who exceeded the clinical cutoff score on the PDQ-4 did not differ ( $X^2 = 1.10$ ,  $p < 0.33$ ). Similarly, the proportions of males (15.8%) and females (17.9%) who exceeded the clinical cutoff score on the SHI did not differ ( $X^2 = 1.06$ ,  $p < 0.36$ ). However, patient age was statistically significantly negatively correlated with scores on both the PDQ-4 ( $r = -0.36$ ,  $p < 0.001$ ) and the SHI ( $r = -0.33$ ,  $p < 0.001$ ), with older respondents having lower scores compared to those of younger respondents. The linear nature of the BPS scores as a function of age, and corresponding percentages of individuals who were positive for BPS, is presented in Table I. To investigate the possibility of a sex-by-age interaction, we conducted multiple regression analyses simultaneously entering age, sex, and an age-by-sex interaction term in the prediction of scores on the PDQ-4 as well as the SHI. The interaction term was not statistically significant for the prediction of scores on the PDQ-4 (Beta =  $-0.04$ ,  $t = -0.32$ ,  $p < 0.76$ ) or the SHI (Beta =  $0.03$ ,  $t = -0.23$ ,  $p < 0.82$ ).

We next examined the pattern of endorsement of BPS items among individuals who exceeded clinical cutoff scores on the respective measure of BPS as a function of sex. Of the nine PDQ-4 items and the 22 SHI items, only one was

endorsed by less than 5% of the sample: SHI item 22 (abused laxatives). This item was not included in the subsequent analyses of individual items. Because a large set of individual items was being analyzed ( $N = 30$ ), we employed the Bonferroni correction for determining an appropriate  $p$  value to be considered statistically significant ( $0.05/30 = 0.002$ ) for each set of analyses. In comparing males ( $n = 67$ ) and females ( $n = 155$ ) who exceeded the clinical cutoff score on the PDQ-4, rates of endorsement of each of the PDQ-4 items did not statistically significantly differ. In comparing males ( $n = 77$ ) and females ( $n = 178$ ) who exceeded the clinical cutoff score on the SHI, rates of endorsement of each of the SHI items statistically significantly differed in only one instance: females (29.8%) were more likely than males (10.4%) to endorse, "Engaged in sexually abusive relationships" [ $X^2(df = 1) = 11.10$ ,  $p < 0.001$ ].

Last, we examined patterns of endorsement of individual BPS items as a function of age. Because younger respondents endorsed more BPS items overall, younger respondents could be expected to be more likely than older respondents to endorse any particular BPS item. Indeed, among those respondents who exceeded the clinical cutoff score for BPS on the PDQ-4 ( $n = 222$ ), age was positively correlated with total PDQ-4 score ( $r = -0.17$ ,  $p < 0.05$ ). Likewise, among those who exceeded the cutoff score for BPS on the SHI ( $n = 255$ ), there was a positive correlation between age and total SHI score ( $r = -0.26$ ,  $p < 0.001$ ). To remove such bias when examining patterns of item endorsement, we performed a series of partial correlations between age and individual BPS items, controlling for total score on the scale from which the BPS items were drawn. Again, using the Bonferroni correction, of the 30 partial correlation coefficients, three were statistically significant: PDQ-4 item 6—"I feel that my life is dull and meaningless" ( $r = 0.27$ ,  $p < 0.001$ ), SHI item 2—"Cut yourself on purpose" ( $r = -0.20$ ,  $p < 0.002$ ), and SHI item 8—"Scratched yourself on purpose" ( $r = -0.22$ ,  $p < 0.001$ ). Even after controlling for total BPS scores, relatively older respondents were less likely to endorse having cut and scratched themselves on purpose, and more likely to feel as though life is dull and meaningless.

### Discussion

With regard to overall scores on the measures of BPS, there was not a statistically significant sex difference nor were there any differences in the proportions of men and women who met the cutoff scores for BPS. However, compared to younger respondents, older individuals reported fewer overall BPS symptoms and rates of substantial BPS. With regard to specific BPS symptoms among respondents with substantial BPS, we encountered few sex- and age-related differences. The exceptions were that women were more likely than men to have engaged in sexually abusive relationships and younger participants were more likely to cut or scratch themselves whereas older participants were more likely to report life as dull and meaningless.

What might explain the sex-related difference encountered in this study (i.e., that women were more likely to engage in sexually abusive relationships)? One contributory

Table I. Comparisons as a function of whether respondents exceeded the clinical cut-off score on at least one of the measures of borderline personality disorder.

Patient age	PDQ-4			SHI		
	Clinical cutoff		%	Clinical cutoff		%
	M	(SD)		M	(SD)	
18–29	3.04	(2.51)	31	3.90	(4.36)	34
30–39	2.86	(2.43)	25	3.14	(4.08)	25
40–49	2.22	(2.19)	18	2.77	(3.47)	24
50–59	1.78	(2.00)	13	1.90	(2.80)	15
60–69	1.17	(1.68)	6	1.04	(1.95)	7
70–79	0.77	(1.17)	2	0.37	(0.94)	2
80–97	0.54	(0.98)	0	0.34	(0.65)	0

Note: PDQ-4 = Personality Diagnostic Questionnaire-4 (Hyler 1994); SHI = Self-Harm Inventory (Sansone et al. 1998).



explanation may be childhood trauma. Specifically, female children are statistically more likely to be sexually abused than male children (Bebbington et al. 2011; Hillis et al. 2000; Lampe 2002). Perhaps this establishes a legacy of repeating such traumatic experiences in adulthood (i.e., re-traumatization; Zanarini et al. 2005b). This factor does not exclude other possible explanations, as well.

What might explain the subtle but different *age-related* differences encountered in this study? We suspect that culture may be a contributory factor. Simply put, culture may partially influence what is and what is not a tolerable behavior within a given generation (e.g., self-cutting was not seemingly as “acceptable” and perhaps viewed as more psychopathological in previous generations). As an example, in this study, self-mutilation did not appear to emerge often in the subculture of older individuals, suggesting that this behavior may have been less socially tolerated in this age group. This age-related finding was evident in a study examining self-cutting behavior between adolescents and young adults (Whitlock et al. 2006). That culture may temper symptom expression was also confirmed in the symptom expression of obsessive-compulsive disorder among Balinese patients (Lemelson 2003) and the symptom expression in schizophrenia (Stompe et al. 2003). In further support of this cultural theme, Jackson and Jovev (2006) stated that “Culture may exert manifold influences on personality and personality disorders” including, “a role in the shaping of personality and personality disorders” (p. 11).

In addition to cultural influences, lower rates of self-harm may be reported by older individuals because they are less likely to divulge emotionally charged incidents, regardless of assurances of anonymity. However, in a study that compared elements of disclosure to close friends (e.g., amount, depth, honesty, and intent), Dickson-Markman (1986) found no age-related differences.

Finally, perhaps recollection difficulties play a role in explaining the differences in reported BPS symptoms by age-group, such that older participants do not recall self-mutilation incidents. However, there were **no differences in self-reported suicide attempts or overdoses** (more dramatic forms of self-harm), so this argument appears less viable.

Importantly, this was a cross-sectional study. So, we cannot infer that older individuals with BPS gradually demonstrate less symptoms. The self-harm assessments were lifetime and indicate that older individuals demonstrated an overall fewer number of different self-harm behaviors.

This study has a number of potential limitations. First, all data were self-report in nature and subject to the inherent limitations of this reporting format, including under-reporting due to denial, misinterpretation, forgetfulness, repression, and/or suppression. Second, self-report measures may generate false positives. Specifically, in the area of BPD, self-report measures are known to yield higher base rates of criteria endorsement compared to interviews (Hopwood et al. 2008). Third, some patients may have participated in several research projects, resulting in repeat patients in the overall sample. Fourth, the measures for BPD used in this study are screening tools, and therefore we have used the term BPS rather than BPD. Despite these

potential limitations, the collective sample is fairly large, all participants were consecutively solicited, and the overall response rates were generally around 90%.

To conclude, in this study, we found comparable prevalence rates of BPS, according to two self-report measures, among men and women participants. In addition, we found few differences in specific self-harm behaviors between men and women, with only one exception: **women with substantial BPS were more likely than men with BPS to have engaged in sexually abusive relationships**. As for age-related differences, compared with older participants, younger participants in this study endorsed a greater number of BPS symptoms. Given that the SHI detects lifetime symptoms, this finding suggests that older individuals with BPS have fewer overall symptoms than younger individuals, but does not confirm that symptoms have over time lessened in older individuals (i.e., cross-sectional study). In addition, with regard to age-related differences, **few BPS symptoms differed as a function of age, with two exceptions: younger individuals were more likely to cut and scratch themselves whereas older individuals were more likely to report life as dull and meaningless**. The modest sex and age pattern differences encountered in this study suggest that profiling symptoms among male versus female/young versus old patients may not differ substantially for the clinician, with a few exceptions.

### Key points

- Variations in the symptoms of borderline personality as a function of sex and age remain unclear, particularly with regard to explicit self-harm behaviors.
- Prevalence rates of BPS among males and females in this sample were similar, according to two self-report measures.
- We regard to sex differences, we found in this study that women with BPS were more likely than men to report having engaged in sexually abusive relationships.
- With regard to age differences, we found in this study that self-cutting and scratching oneself were more common among younger participants with BPS whereas finding life dull and meaningless was more common among older individuals with BPS.

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### Statement of interest

None of the authors report conflicts of interest.

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